

as the eye could reach; the ice-field extended from east to west one and one-half miles; also passed an iceberg. The s. s. "Rhynland," in N. 46° 19', W. 45° 44', passed a large iceberg, about two hundred feet high; in N. 46° 04', W. 46° 26', passed a group of nine icebergs, three of which were very large, one apparently leaving a reef extending northward about half a mile, over which the sea broke furiously; from N. 45° 55', W. 46° 42', to N. 45° 13', W. 48° 49', passed through large quantities of field-ice; new ice forming all over the Banks. In N. 45° 33', W. 43° 26', passed a large iceberg; in N. 45° 21', W. 43° 53', passed a large iceberg; in N. 45° 13', W. 48° 49', cleared the field-ice.

21st.—S. S. "Werra," in N. 44° 43', W. 48° 40', passed an iceberg about eighty feet long and twenty feet high; s. s. "Republic," in N. 43° 46', W. 49° 20', passed an iceberg; s. s. "Waldensian," in N. 43° 31', W. 50° 38', fell in with large patches of field-ice; ice was also seen in N. 44° 25', W. 48° 51'. The s. s. "Newfoundland," at Halifax, Nova Scotia, from Saint John's, Newfoundland, reported having passed a field of ice, extending from Saint John's to Whitehead, being visible as far as the eye could see.

22d.—S. S. "Helvetia," in N. 44° 05', W. 48° 53', passed through large quantities of field-ice, also sighted two icebergs; the s. s. "Alaska," in N. 44° 05', W. 48° 53', passed an iceberg and much drift-ice; the s. s. "State of Florida," between N. 48° 40', W. 48° 40', and N. 44° 00', W. 49° 10', passed large fields of ice and several icebergs, one of which was from eighty to one hundred feet high.

23d.—S. S. "Bavarian," in N. 45° 25', W. 47° 52', steamed through one hundred and twenty miles of field ice and sighted four large icebergs; the s. s. "Furnessia," in N. 45° 58', W. 46° 18', passed an iceberg about four miles to the northward; the s. s. "Hermann," from N. 45° 30', W. 47° 00', to N. 44° 20', W. 49° 00', passed large fields of ice and six large icebergs; the s. s. "Weser," in N. 43° 40', W. 48° 12', passed an ice-field, also, in N. 43° 34', W. 39° 03', passed two icebergs.

24th.—S. S. "Bothnia," in N. 44° 12', W. 48° 21', sighted two large icebergs to the northward, one about ten miles off; also in N. 44° 05', W. 48° 36', passed several small icebergs and patches of ice; the s. s. "Denmark," in N. 46° 02', W. 47° 08', at 7.30 a. m., sighted large quantities of field-ice and numerous large icebergs; field-ice much broken up; got clear of ice in N. 44° 38', W. 48° 17', having steered southward for sixteen hours to avoid it. The s. s. "Furnessia," in N. 44° 36', W. 48° 37', passed several small icebergs; the s. s. "Jason," in N. 48° 08', W. 48° 56', passed three large icebergs; the s. s. "Vandalia," in N. 44° 56', W. 48° 22', passed two icebergs, also in N. 44° 46', W. 48° 37', passed an ice-field.

25th.—S. S. "Jason," in N. 42° 01', W. 52° 46', passed an iceberg three hundred and fifty feet high; the s. s. "Pennland," in N. 45° 00', W. 47° 30', passed through a large quantity of field-ice; s. s. "Vandalia," in N. 43° 24', W. 50° 55', passed an iceberg.

26th.—S. S. "Bothal," in N. 46° 00', W. 47° 29', passed a large iceberg; the s. s. "Erl King," in N. 45° 00', W. 47° 30', at 7.30 a. m., passed a large iceberg; steered wsw. fifty miles and passed twenty-six icebergs; at noon, in N. 44° 40', W. 48° 35', encountered quantities of field ice closely packed, but easily broken; steamed through it for thirty miles, then found clear water.

27th.—Captain H. Schoonhoven, of the s. s. "Daniel Steinhmann," reported as follows: "27th, at 12.09 p. m., Greenwich mean time, in N. 45° 33', W. 47° 10', saw the first iceberg bearing nw. by compass, distant one mile, my true course being wsw.; about one hour later, saw an iceberg right ahead, and then several others on both sides, some being of immense size; kept ship away sw. (true) to clear them. At 4 p. m., still steering sw., steamed along a large ice-field, bearing about nw. by compass, distant two miles; it was from fifteen to twenty miles in extent, and there could be seen amongst it several large icebergs; later, passed several icebergs. The weather

had now become misty, and at 1 a. m. of the 28th, fell in with a large ice-field; kept away s. by w., (true), but at 1.30 a. m., was completely surrounded by ice; the sea being smooth, steamed slowly through it, keeping a ssw. course. At 3.30 a. m., got clear of ice, weather having cleared up. I again steered my wsw. course at full speed, being then in N. 44° 29', W. 49° 04', and saw no icebergs nor field-ice afterwards. We could distinguish the icebergs in the dark at a distance of one-quarter to one-half mile."

27th.—S. S. "Schiedam," in N. 44°, W. 47°, passed three icebergs and some small pieces; the s. s. "Spain," between N. 45° 03', W. 48° 26', and N. 44° 05', W. 49° 06', passed thirteen icebergs and large quantities of field-ice. The s. s. "Wieland," between N. 45°, W. 48° and N. 44°, W. 50°, saw twenty-five icebergs, and from 3.45 p. m. to 6 p. m., steamed a southerly course along the edge of an ice-field.

28th.—S. S. "British Crown," in N. 44°, W. 47°, passed three icebergs; s. s. "Lake Manitoba," in N. 45°, W. 48°, passed south of a vast ice-field and numerous icebergs, extending north and south as far as the eye could reach; the s. s. "Sorrento," in N. 45° 00', W. 48° 08', passed through thirty-seven miles of field-ice; the s. s. "State of Alabama," in N. 42° 30', W. 50° 00', passed a quantity of drift-ice; the s. s. "Newcastle City," in N. 45° 20', W. 48° 00', passed several icebergs and heavy drift-ice.

March 2d.—S. S. "Eastbourne," in N. 47°, W. 47°, passed several large icebergs.

3d.—S. S. "Greece," from N. 43° 29', W. 48° 01', to N. 42° 27', W. 49° 31', passed fourteen icebergs and a quantity of broken ice; the s. s. "Hohenstauffen," in N. 45° 43', W. 48° 00', passed several icebergs and some large ice-fields.

4th.—S. S. "Parthia," between N. 43° 50', W. 48° 33' and N. 43° 18', W. 49° 45', passed several icebergs; the s. s. "Wisconsin," in N. 43° 14', W. 49° 04', at 9.15 p. m., passed a large iceberg; the s. s. "Devon," N. 47° 44', W. 43° 44', reported: from the 4th to 6th, passed twelve large icebergs, and passed through about fifty miles of field ice; the s. s. "Newcastle City," forty miles south of Sambro, Nova Scotia, got into a field of ice and was detained in it for eight hours; the s. s. "State of Nebraska," in N. 43° 00', W. 49° 30', passed several icebergs and some field ice.

5th.—The s. s. "Australia," in N. 45° 00', W. 47° 10', passed several icebergs; the s. s. "Oder," between N. 47° 07', W. 46° 58', and N. 43° 18', W. 50° 04', passed immense fields of ice and many icebergs; the s. s. "Pieter de Coninck," in N. 42° 50', W. 49° 30', passed large iceberg.

7th.—S. S. "Peruvian," in N. 42° 33', W. 51° 00', passed a large iceberg.

The s. s. "Arctic," at Saint John's, Newfoundland, March 11th, from Dundee, February 27th, reported having passed through two hundred and fifty miles of field ice on the Atlantic. When three hundred miles east of Saint John's, seventy-eight enormous icebergs were seen from the steamer's bridge.

TEMPERATURE OF THE AIR.

[Expressed in degrees, Fahrenheit.]

The distribution of mean temperature over the United States and Canada, for the month of February, 1883, is exhibited on chart iii., by the dotted isothermal lines.

In the districts south of the Ohio river and east of the Mississippi, the mean temperature for the month has been above the normal, the departures being greatest in the south Atlantic and east Gulf states. In all other districts the temperature has been below the normal. In New England, and over the southern part of the country from the Rio Grande valley to Pacific coast, the departures from the normal have been slight, but they have been very marked in the northern plateau and northern and middle slopes.

In the first column of the following table is shown the mean temperature of February in previous years for the several districts, as determined from observations made at the Signal-Service stations; the second column shows the mean of Feb-

ruary, 1883, and the third column shows the departures from the February normal:—

Average Temperatures for February, 1883.

Districts.	Average for February Signal Service observations.		Comparison of Feb., 1883, with the average for several years.
	For several years.	For 1883.	
New England.....	28.6	28.0	0.6 below.
Middle Atlantic states.....	35.5	37.7	2.2 above.
South Atlantic states.....	49.5	53.8	4.3 above.
Florida peninsula.....	62.7	69.2	6.5 above.
Eastern Gulf.....	52.6	56.5	3.9 above.
Western Gulf.....	53.3	56.6	2.7 below.
Rio Grande valley.....	59.1	56.3	2.8 below.
Tennessee.....	44.2	45.8	1.6 above.
Ohio valley.....	39.7	36.8	0.1 above.
Lower lakes.....	26.4	24.3	2.1 below.
Upper lakes.....	22.8	17.8	5.0 below.
Extreme northwest.....	11.4	5.5	5.9 below.
Upper Mississippi valley.....	28.2	21.6	6.6 below.
Missouri valley.....	27.0	21.9	5.1 below.
Northern slope.....	25.9	17.1	8.8 below.
Middle slope.....	34.8	22.0	12.8 below.
Southern slope.....	45.4	43.0	2.4 below.
Northern plateau.....	31.6	15.0	16.6 below.
Middle plateau.....	32.5	26.7	5.8 below.
Southern plateau.....	45.4	44.5	0.9 below.
North Pacific.....	39.4	35.1	4.3 below.
Middle Pacific.....	50.0	46.3	3.7 below.
South Pacific.....	54.3	52.2	2.1 below.
Mount Washington, N. H.....	6.5	2.3	4.2 below.
Pike's Peak, Colo.....	3.3	4.4	1.1 above.

The following are some of the extreme monthly mean temperatures reported from Signal-Service stations:—

Stations reporting highest.	Stations reporting lowest.
Key West, Florida..... 75.0	Saint Vincent, Minnesota..... 0
Punta Rassa, Florida..... 70.7	Fort Washakie, Wyoming..... 1.0
Cedar Keys, Florida..... 66.9	Mt. Washington, New Hampshire..... 2.3
Jacksonville, Florida..... 64.3	Moorhead, Minnesota..... 2.9
New Orleans, Louisiana..... 62.9	Pike's Peak, Colorado..... 4.4
Port Eads, Louisiana..... 61.8	Eagle Rock, Idaho..... 5.1
Pensacola, Florida..... 60.9	Bismarck, Dakota..... 7.8
Savannah, Georgia..... 60.1	Fort Assinniboine, Montana..... 9.5
Laredo, Texas..... 59.6	Fort Keogh, Montana..... 10.8
Mobile, Alabama..... 59.6	Saint Paul, Minnesota..... 12.1
Brownsville, Texas..... 58.8	Escanaba, Michigan..... 12.4

DEVIATIONS FROM MEAN TEMPERATURE.

The departures exhibited by the reports from the regular Signal-Service stations are shown in the above table of comparative temperatures.

The Chief Signal Officer is indebted to voluntary observers for the following notes upon this subject. These comparisons are of special importance, as many of the records from which they are made cover long periods of time, some extending back many years before the establishment of the Signal Service:—

Illinois.—Riley, the mean temperature of the past winter months is 14° 3, or 7° 1 below the average of the last twenty years. Anna, mean temperature, 35° 0, or 3° 66 below the February mean of the last eight years.

Indiana.—Logansport, mean temperature, 26° 2, is 4° 1 below the February mean of the last twenty-four years. The lowest February mean of that period, 17° 5, occurred in 1875. The maximum temperature of the month, 70°, is 6° 3 above the average; the minimum, —5°, is 8° 4 below the average.

Vevay, mean temperature, 39° 16, is 3° 26 above the February average. The maximum temperature, 75°, is 11° 37, above the average maxima; the minimum, 15°, is 9° 75 above the average minima.

Kansas.—Wellington, mean temperature, 31° 3, is 4° 4 below the February average of the last four years. During that period, the highest February mean, 40° 1, occurred in 1882. The minimum temperature of February, 1883, is —15° 5, or 10° below any former February minimum of four years record. Yates Centre, mean temperature, 27° 2, is 6° below the average of the last three years. The average temperature of the past winter is 4° 6 below the mean of the three preceding years. Lawrence, Professor F. H. Snow, of the State University, reports mean temperature, 27° 92, or 5° 64 below the February average of the last fifteen years. During that period the high-

est February mean, 41° 65, occurred in 1882; the lowest, 21° 92, occurred in 1875. The highest maximum temperature of the same period, 74° 5, occurred in 1876; the lowest, —12° (with the exception of —13°, 1883), occurred in 1872. The mean temperature of the month, at 7 a. m., was 21° 34; at 2 p. m., 34° 44; at 9 p. m., 27° 96. The past winter, although cold, has been less severe than the winters of 1872–3, 1874–5, and 1880–1.

Maine.—Gardiner, mean temperature, 18° 9, or 1° 62 below the February average of forty-seven years.

Maryland.—Fallston, mean temperature, 32° 79, is 0° 48 above the February average of the last twelve years. During that period the highest February mean, 37° 79, occurred in 1880; the lowest, 23° 67, occurred in 1875.

Missouri.—Saint Louis, the Missouri Weather Service reports the mean temperature to be 3° 5 below the normal as deduced from a record covering a period of more than forty years. Corning, mean temperature, 27° 92, or 5° 64 below the average of the last fifteen years.

New Hampshire.—Grafton, mean temperature, 16° 7 or 3° 5 below the average of February from 1878 to 1881, inclusive, and is lower than the mean of any February of that period. Contoocookville, mean temperature, 21° 8, is 0° 75 below the February average of the last twelve years.

New York.—North Volney, mean temperature, 22° 2, is 6° below the February average of last fifteen years. During that period the highest February mean, 28° 4, occurred in 1872; the lowest, 13° 2, occurred in 1875. Palermo, mean temperature, 19° 9, is 1° 9 below the February average of the last thirty years. During that period the highest February mean, 27° 6, occurred in 1877; the lowest, 12° 6, occurred in 1875.

Vermont.—Woodstock, mean temperature, 16° 8, is about the February normal of the last sixteen years. The highest February mean of that period, 23° 5, occurred in 1877; the lowest, 9° 67 occurred in 1875. The highest recorded temperatures of the same period, 59°, occurred in 1875; the lowest, —41°, occurred in 1874.

Virginia.—Variety Mills, mean temperature, 41° 4, is 1° 8 above the February average of the last six years. Wytheville, mean temperature, 41° 0, is 3° 82 above the February mean of a period of nineteen years.

West Virginia.—Helvetia, mean temperature, 38° 2, is 2° 12 above the February average of the last seven years.

RANGES OF TEMPERATURE AT SIGNAL-SERVICE STATIONS.

The monthly ranges of temperature over the entire country have varied from 17° at Key West, Florida, to 99° at Fort Benton, Montana. The largest monthly ranges have occurred in the northern and middle slopes and in the Missouri valley; the smallest, along the Atlantic and Gulf coasts and in California. The smallest monthly ranges are as follows: Key West, Florida, 17°; Cape Mendocino, California, 31°; Provincetown, Massachusetts, 31°; Fort Macon and Hatteras, North Carolina, 31°; Punta Rassa, Florida, 31°; Newport, Rhode Island, 32°; Portsmouth, North Carolina, 34°; Block Island, Rhode Island, 34°; San Francisco, California, 36°; Cape May, New Jersey, 36°; Smithville, North Carolina, 36°; Albany, New York, 37°; New London, Connecticut, 38°; Charleston, South Carolina, 39°; Williamsport, Pennsylvania, 40°; Delaware Breakwater, Delaware, 40°; Philadelphia, Pennsylvania, 40°; New Orleans, Louisiana, 40°. The largest monthly ranges are: Fort Benton, Montana, 99°; Fort Washakie, Wyoming, 95°; Fort Sill, Montana, 95°; Deadwood, Dakota, 94°; Fort Keogh, Montana, 90°; Fort Bennett, Dakota, 89°; Fort Assinniboine, Montana, 88°; West Las Animas, Colorado, 86°; Fort Missoula, and Billings, Montana, 85°; Cheyenne, Wyoming, 83°; Helena, Montana, 82°; Omaha, Nebraska, 82°; Fort Buford, Dakota, 81°; North Platte, Nebraska, 81°; Fort Elliott, Texas, 80°; Huron, Dakota, 80°; Dayton, Washington Territory, 78°; Henrietta, Texas, 78°; Denver, Colorado, 78°; Leavenworth, Kansas, 78°; Jacksborough, Texas, 77°; Eagle Rock, Idaho, 76°; Duluth, Minnesota, 75°; Stockton, Texas, 74°; Fort Concho, Texas, 73; Moorhead and Saint Vincent,

Minnesota, 73°; Des Moines, Iowa, 73°; Mount Washington, New Hampshire, 72°; Umatilla, Oregon, 70°; Fort Sill, Indian Territory, 70°; Saint Paul, Minnesota, 70°; Fort Smith, Arkansas, 70°; Denison, Texas, 70°. The greatest daily ranges of temperature have varied in the different districts as follows:

New England.—From 16° at Provincetown, Massachusetts, on the 1st, 10th, and 22d, to 27° at Portland, Maine, on the 14th, and 43° on the summit of Mount Washington, New Hampshire, on the 4th.

Middle Atlantic states.—From 23° at Philadelphia and Williamsport, Pennsylvania, on the 3d and 24th, respectively; at Barnegat City, New Jersey, on the 4th, and at Albany, New York, on the 24th, to 35° at Cape Henry and Norfolk, Virginia, on the 4th.

South Atlantic states.—From 21° at Fort Macon, North Carolina, on the 18th, to 33° at Savannah and Augusta, Georgia, on the 18th and 28th, respectively, and at Wilmington, North Carolina, on the 3d.

Florida peninsula.—From 10° at Key West, on the 23d, to 20° at Punta Rassa, on the 28th.

Eastern Gulf.—From 25° at Pensacola, Florida, on the 21st, to 40° at Starkville, Mississippi, on the 17th.

Western Gulf.—From 21° at Port Eads, Louisiana, on the 17th, and 30° at Galveston, Texas, on the 3d, to 54° at Palestine, Texas, on the 3d.

Rio Grande valley.—From 42° at Brownsville, on the 4th, to 45° at Eagle Pass, on the 3d.

Ohio valley.—From 29° at Indianapolis, Indiana, on the 16th, and 17th, to 40° at Pittsburg, Pennsylvania, on the 17th.

Table of Comparative Minimum Temperatures for the Month of February.

State or Territory.	Minimum for February, 1883, Signal Service.		Lowest since Signal-Service stations were opened—3 to 12 years.			Lowest from any other source.			
	Station.	Temp.	Station.	Temp.	Year.	Place.	Temp.	Year.	Length of Record.
Alabama	Montgomery	32	Montgomery	0	1875	Huntsville	-6	32? '36?	9 years
Arizona	Fort Apache	8	Prescott	-11	1880	Fort Canby (old)	-12	1855	12 "
Arkansas	Fort Smith	8	Little Rock	22	1881	Fort Smith	-4	1840	22 "
California	Yisaba	17	Campo	16	1877	Fayetteville	-4	1881	1 "
Colorado	West Las Animas	-22	Pike's Peak	-37	1875	Fort Bidwell	-18	1868	19 "
Connecticut	Pike's Peak	-22	Denver	-20	1881	Fort Garland	-23	1880	30 "
Dakota	New Haven	8	New Haven	-4	1881	Fort Lewis	-30	1881	1 "
Delaware	Rapid City	-40	New London	-3	1873	Colebrook	-28	1861	14 "
Dist. of Columbia	Fort Buford	-40	Pembina	-48	1876	New Haven	-16	1835?	86 "
Florida	Delaware Breakwater	23	Delaware Breakwater	7	1881	Fort Abercrombie	-40	'61, '69	16 "
Georgia	Washington	21	Washington	-1.5	1875	Fort Pembina	-45	1875	7 "
Idaho	Pensacola	38	Saint Marks	28	1875	Dover	-3	1875	6 "
Illinois	Atlanta	28	Atlanta	21	1881	Fort Delaware	0	1866?	45 "
Indiana	Eagle Rock	-36	Angusta	22	1875	Washington	-5	1852?	49 "
Indian Territory	Chicago	-9	Eagle Rock	-29	1882	Fort Barrancas	11	1852?	58 "
Iowa	Indianapolis	4	Chicago	-13	1875	Angusta Arsenal	-2	1835	51 "
Kansas	Fort Sill	-3.5	Indianapolis	-8	1875	Fort Hall	-13	1880	15 "
Kentucky	Des Moines	-23	Fort Supply	-8	1881	Winnebago	-20	1861?	11 "
Louisiana	Leavenworth	-12	Fort Gibson	-5	1875	Belvidere	-31.5	1875	5 "
Maine	Louisville	17	Dubuque	-31	1875	Spiceland	-21	1866	14 "
Maryland	Shreveport	24	Dodge City	-10	1881	Fort Gibson	-12	1857?	49 "
Massachusetts	Eastport	-6	Leavenworth	-9	73, '75	Guttenburg	-37	1868	11 "
Michigan	Ocean City	19	Louisville	0	1875	Fort Leavenworth	-26	1834	50 "
Minnesota	Boston	11	Shreveport	22	75, '81	Newport Barracks	-20	1857	29 "
Mississippi	Boston	-6.5	Eastport	-20	1875	Fort Jessup	7	23, '38	23 "
Missouri	Springfield	-6	Portland	-7	74, '79	Baton Rouge	10	1852?	57 "
Montana	Marquette	-27	Baltimore	2	1873	Brunswick	-28	1859?	53 "
Nebraska	Escanaba	-24	Boston	-6.5	1875	Fort McHenry	-6	1875	50 "
Nevada	Saint Vincent	-38	Springfield	-6	1880	Dear Park	-10	1881	1 "
New Hampshire	Breckenridge	-34	Marquette	-27	1875	Williamstown	-26	1835?	61 "
New Jersey	Duluth	-34	Escanaba	-32	1875	Lunenburg	-26	1855	24 "
New Mexico	Breckinridge	-34	Saint Vincent	-35	1882	Fort Brady	-55	1875	59 "
New York	Duluth	-34	Breckenridge	-34	75, '79	Ontonagon	-37	1861	11 "
North Carolina	Vicksburg	21	Duluth	-34	1875	Fort Ripley	-43	1860?	18 "
North Dakota	Saint Louis	-0.5	Vicksburg	21	1875	Columbus	14	1864?	10 "
Ohio	Fort Assiniboine	-47	Saint Louis	-3	1875	Saint Louis	-25	1835	44 "
Oregon	North Platte	-29	Fort Benton	-34	1873	Fort Ellis	-53	1872	13 "
Pennsylvania	Dodge City	-16	North Platte	-23	1881	Fort MacPherson	-24	1874	13 "
Rhode Island	Winnemucca	-17	Dodge City	-16	1875	Camp Sheridan	-29	1881	5 "
South Carolina	Mount Washington	-28	Winnemucca	-17	1882	Fort Ruby	-19	1864?	6 "
Tennessee	Little Egg Harbor	12	Mount Washington	-42	1876	Stratford	-37	1861	11 "
Texas	Atlantic City	-5	Atlantic City	-5	1875	Dartmouth College	-33	1848	18 "
Utah	Squan Beach	-5	Squan Beach	-5	1875	Newark	-7	1861	14 "
Vermont	Santa Fé	6	Santa Fé	-3	79, '80	Fort Union	-21	1881	29 "
Virginia	Oswego	2	Albany	-18	1875	Sackett's Harbor	-40	1861	8 "
Washington	Charlotte	30	Buffalo	-13	1875	Belleville	-34	1836?	15 "
West Virginia	Wilmington	15	Wilmington	15	1875	Fort Johnson	3	1836?	58 "
Wisconsin	Kittyhawk	11	Kittyhawk	11	1881	Hillsborough	-22	1838	35 "
Wyoming	Toledo	-12	Toledo	-12	1875	Camp Harney	-16	1868	12 "
	Sandusky	-11	Sandusky	-11	1875	Lewisburg	-23	'65, '67	6 "
	Umatilla	-24	Umatilla	0	1881	Philadelphia	-2	1866	113 "
	Portland	24	Portland	24	1875	Providence	-16	1866?	35 "
	Erie	6	Erie	-16	1875	Charleston	22	1852?	105 "
	Pittsburg	-12	Pittsburg	-12	1875	Fort Moultrie	6	1835	38 "
	Newport	-2	Newport	-2	1881	Glenwood Cottage	-4	1864?	11 "
	Charleston	26	Charleston	26	1881	Fort McKavett	8	1873?	28 "
	Knoxville	6	Knoxville	6	1873	Fort Elliott	4	1880	1 "
	Fort Elliott	-1	Fort Elliott	-1	1881	Fort Crittenden	0	1880	3 "
	Galveston	32	Galveston	32	1881	Camp Douglass	0	1868	5 "
	Salt Lake City	0	Salt Lake City	-3	1874	Alexandria	3	1855	12 "
	Burlington	-18	Burlington	-18	1881	Fort Colville	-20	1880	15 "
	Cape Henry	25	Fort Myer	1	1881	Helvetia	-6	1880	3 "
	Dayton	-24	Lynchburg	3	1875	Fort Howard	-38	1823	31 "
	Morgantown	12	Spokane Falls	-7	1881	Superior City	-38	1863	3 "
	La Crosse	-21	Morgantown	-10	1875	Fort Fetterman	-40	1873	12 "
	Milwaukee	-32	La Crosse	-34	1875	Fort Laramie	-35	1864?	28 "
	Cheyenne	-24	Milwaukee	-32	1875				
			Cheyenne	-24	1874				

Table of Maximum and Minimum Temperatures for February, 1883.

State or Territory.	Signal Service.			U. S. Army Post Surgeons, or Voluntary Observers.		
	Station.	Max.	Min.	Station.	Max.	Min.
Alabama.....	Montgomery.....	81	32	Green Springs.....	84	0
Do.....	Mobile.....	78	36	McPherson Barracks.....	83	31
Arizona.....	Yuma.....	82	31	Texas Hill.....	84	28
Do.....	Fort Apache.....	66	0	Mount Ida.....	70	8
Arkansas.....	Fort Smith.....	78	8	Borden.....	100	17
California.....	San Diego.....	83	36	Berryvale.....	78	9
Do.....	Visalia.....	76	17	Pagos Springs.....	70	30
Colorado.....	West Las Animas.....	64	22	Fort Lyon.....	66	23
Do.....	Pike's Peak.....	56	22	Southington.....	63	3
Connecticut.....	New Haven.....	53	8	Morrison.....	70	30
Dakota.....	Rapid City.....	60	40	Fort Totten.....	35	40
Do.....	Fort Sully.....	60	30			
Do.....	Fort Buford.....	41	40			
Delaware.....	Del. Breakwater.....	63	23	Kendall Green.....	60	20
District of Columbia.....	Washington.....	68	21	Saint Augustine.....	81	40
Florida.....	Sanford.....	85	50	Fort Barrancas.....	78	23
Do.....	Pensacola.....	78	38	Forsyth.....	78	32
Georgia.....	Augusta.....	82	34			
Do.....	Atlanta.....	74	28			
Idaho.....	Fort Lapwai.....	58	25	Anna.....	73	8
Do.....	Eagle Rock.....	40	30	Morrison.....	42	22
Illinois.....	Calro.....	74	12	Princeton.....	70	10
Do.....	Chicago.....	57	9	South Bend.....	48	10
Indiana.....	Indianapolis.....	72	4			
Do.....						
Indian Territory.....	Fort Sill.....	74	3.5	Cedar Rapids.....	48	33
Do.....	Fort Supply.....	73	11	Humboldt.....	38	32
Iowa.....	Keokuk.....	62	7	Lawrence.....	68	15
Do.....	Des Moines.....	50	25	Wellington.....	68	15
Kansas.....	Leavenworth.....	66	12	Topeka.....	65	21
Do.....				Frankfort.....	78	17
Kentucky.....	Louisville.....	78	17	Point Pleasant.....	85	28
Louisiana.....	New Orleans.....	80	40			
Do.....	Shreveport.....	77	24	Dexter.....	48	14
Maine.....	Portland.....	54	7	Cornish.....	52	4
Do.....	Eastport.....	43	0	Emmitsburg.....	68	11
Maryland.....	Baltimore.....	64	22	Woodstock.....	65	10
Do.....	Ocean City.....	71	19	Rowe.....	44	8
Massachusetts.....	Boston.....	60	11	Williamstown.....	45	6
Do.....	Provincetown.....	44	13	Fort Brady.....	40	37
Michigan.....	Detroit.....	58	0	Hillsdale.....	52	7
Do.....	Escanaba.....	37	24	Minneapolis.....	41	27
Minnesota.....	Saint Paul.....	46	24			
Do.....	Saint Vincent.....	35	38			
Mississippi.....	Vicksburg.....	83	28	Protem.....	78	9
Do.....	Starkville.....	81	24	Corning.....	58	23
Missouri.....	Saint Louis.....	67	0.5	Oregon.....	62	22
Do.....				Fort Maginnis.....	58	40
Montana.....	New Chicago.....	60	45	Fort Ellis.....	56	40
Do.....	Fort Assiniboine.....	41	47	Fort Niobrara.....	65	32
Nebraska.....	Omaha.....	57	25	Utica.....	60	28
Do.....	North Platte.....	52	29	Goldsboro.....	80	30
Nevada.....	Pioche.....	57	1	Boca.....	56	25
Do.....				Grafton.....	48	14
New Hampshire.....	Mt. Washington.....	43	28	New Market.....	59	7
Do.....				Vineland.....	66	18
New Jersey.....	Atlantic City.....	64	17	Moorestown.....	50	5
Do.....	Little Egg Harbor.....	61	12	Fort Union.....	62	7
New Mexico.....	Santa Fé.....	62	6	Lordsburg.....	67	20
Do.....	Silver City.....	62	12	West Point.....	57	5
New York.....	Buffalo.....	64	7	Plattsburg Barracks.....	49	11
Do.....	Oswego.....	51	2	Highlands.....	59	12
North Carolina.....	Kittyhawk.....	76	32	Chapel Hill.....	77	25
Do.....	Charlotte.....	76	30	Portsmouth.....	84	20
Ohio.....	Cincinnati.....	73	16	Ruggles.....	70	2
Do.....	Sandusky.....	70	4	Albany.....	63	8
Oregon.....	Roseburg.....	69	9			
Do.....	Umatilla.....	46	24	Dyberry.....	47	10
Pennsylvania.....	Pittsburg.....	76	13	Meadville.....	68	4
Do.....	Erie.....	70	0			
Rhode Island.....	Narragansett Pier.....	52	11	Stateburg.....	78	34
South Carolina.....	Charleston.....	78	39	Austin.....	78	21
Tennessee.....	Memphis.....	79	21	Murfreesborough.....	76	21
Do.....	Nashville.....	77	22	Fort Concho.....	81	5
Texas.....	Laredo.....	91	25			
Do.....	Fort Elliott.....	70	10	Ogden.....	55	8
Utah.....	Salt Lake City.....	50	0	Promontory.....	49	14
Do.....				Woodstock.....	55	22
Vermont.....				Johnsontown.....	80	26
Virginia.....	Cape Henry.....	78	25	Marion.....	75	18
Do.....	Lynchburg.....	73	28	Fort Canby.....	66	14
Washington.....	Almota.....	54	9			
Do.....	Dayton.....	54	24	Helvetia.....	72	16
West Virginia.....	Morgantown.....	75	12	Neillsville.....	52	26
Wisconsin.....	Milwaukee.....	50	13	Beloit.....	51	18
Do.....	La Crosse.....	45	21	Fort Bridger.....	43	1
Wyoming.....	Cheyenne.....	55	28	Fort Washakie.....	45	57
Do.....	Fort Washakie.....	42	54			

Tennessee.—From 30° at Chattanooga, on the 2d, to 35° at Memphis, on the 2d and 3d.

Lower lakes.—From 28° at Detroit, Michigan, on the 13th, to 42° at Buffalo, New York, on the 17th.

Upper lakes.—From 29° at Grand Haven, Michigan, on the 12th, and at Milwaukee, Wisconsin, on the 29th, to 44° at Alpena, Michigan, on the 17th.

Extreme northwest.—From 38° at Bismarck, Dakota, on the 19th, to 43° at Moorhead, Minnesota, on the 12th.

Upper Mississippi valley.—From 29° at Dubuque, Iowa, on the 16th, to 48° at Davenport, Iowa, on the 16th.

Missouri valley.—From 32° at Yankton, Dakota, on the 12th, to 48° at Leavenworth, Kansas, on the 16th.

Northern slope.—From 34° at Billings, Montana, on the 10th, to 53° at Fort Washakie, Wyoming, on the 10th.

Middle slope.—From 26° on the summit of Pike's Peak, Colorado, on the 24th, and 37° at Fort Elliott, Texas, on the 25th, to 56° at West Las Animas, Colorado, on the 18th.

Southern slope.—From 38° at Fort Davis, Texas, on the 1st, to 54° at Fort Stockton, Texas, on the 6th.

Southern plateau.—From 33° at Santa Fé, New Mexico, on the 18th and 19th, to 55° at Fort Apache, Arizona, on the 5th.

Middle plateau.—From 27° at Salt Lake City, Utah, on the 1st, to 30° at Pioche, Nevada, on the 9th.

Northern plateau.—From 23° at Umatilla, Oregon, on the 2d and 7th, to 43° at Eagle Rock, Idaho, on the 8th.

North Pacific.—From 24° at Portland, Oregon, on the 25th, to 34° at Roseburg, Oregon, on the 26th.

Middle Pacific.—From 19° at San Francisco, California, on the 27th, to 36° at Red Bluff, California, on the 19th.

South Pacific.—From 33° at Visalia and Los Angeles, California, on the 12th and 18th, respectively, to 34° at San Diego, California, on the 19th.

LOW TEMPERATURES.

Topeka, Kansas, 2d.—A severe blizzard is now prevailing over nearly the entire state. The continued cold weather has frozen some of the smaller streams to the bottom. The winter is proving the most severe for years.

New Orleans, Louisiana, 4th.—Reports from points in Texas state that extremely cold weather prevails throughout the state. At Dallas, the temperature fell to 3° below zero, and rose to 7° above zero at noon, but fell to zero at night. The country is covered with snow and ice; all trains are out of time, and business is nearly suspended.

Fort Reno, Indian Territory.—A severe norther set in at about 9 a. m. of the 2d, and continued until the 6th, during which very cold weather prevailed. Two companies of the Ninth Cavalry from Fort Sill, Indian Territory, en route via this point to Okalahoma, had a large number of men badly frost-bitten. The storm is said to have been the most severe experienced in this territory.

Umatilla, Oregon, 4th.—The minimum temperature of this date, —24°, is the lowest that has been recorded since the establishment of the signal office at this place, in 1877.

San Antonio, Texas, 5th.—Stockmen report the loss of large numbers of sheep from freezing. The temperature fell to 17° at this place, and at many points in the northern part of the state it fell to zero. The weather is the coldest experienced in Texas for many years, causing much suffering among the lower classes of the inhabitants.

Fort McKavett, Texas, 8th.—It is estimated that from two to three per cent. of the live-stock in this section has been killed by the recent cold weather.

Princeton, California, 8th.—Coldest weather experienced here for eleven years; minimum temperature this date, 20°.

Corning, Missouri, 16th.—The minimum temperature of this date, —16°, is the lowest recorded here during the last sixteen years.

Denver, Colorado, 9th.—The cattle men of this state estimate the loss of cattle, from the recent cold, to be about five per cent., and the loss of sheep somewhat greater.

FROSTS.

In the various districts they were reported on the following dates:—

New England.—1st to 28th.

Middle Atlantic states.—1st, 2d, 5th, 6th, 8th, 9th, 10th, 13th, 14th, 18th to 24th, 27th.

South Atlantic states.—1st, 2d, 19th to 23d, 25th to 28th.

Eastern Gulf.—1st, 20th, 27th, 28th.
Western Gulf.—1st, 3d to 6th, 12th, 17th to 21st, 25th to 28th.
Rio Grande valley.—4th, 5th, 7th, 17th, 18th.
Tennessee.—1st, 2d, 4th to 10th, 17th to 21st, 25th to 28th.
Ohio valley.—1st, 2d, 4th to 10th, 12th, 13th, 17th to 21st, 23d, 26th, 27th.
Lower lakes.—1st, 5th, 6th, 8th, 10th, 12th, 13th, 23d.
Upper lakes.—1st to 28th.
Extreme northwest.—1st to 28th.
Upper Mississippi valley.—1st to 28th.
Missouri valley.—1st to 28th.
Northern slope.—1st to 28th.
Middle slope.—1st to 7th, 9th, 10th, 12th, 13th, 14th, 20th to 23d, 25th to 28th.
Southern slope.—3d, 4th, 5th, 8th, 11th, 17th to 20th.
Southern plateau.—1st to 12th, 14th to 26th, 28th.
Middle plateau.—3d, 4th, 5th, 7th to 14th, 16th to 28th.
Northern plateau.—1st to 14th, 16th, 17th, 20th, 23d to 28th.
North Pacific.—1st to 11th, 14th to 17th, 23d to 26th, 28th.
Middle Pacific.—1st to 12th, 15th to 20th, 27th.
South Pacific.—2d to 12th, 15th to 19th.

ICE.

The subject of the formation of ice in the northern sections is considered elsewhere in the REVIEW under the heading "Ice in Rivers and Harbors." The following are exceptional cases of ice-formation in the southern sections of the country:—

California.—Los Angeles, 1st, 3d, 4th, 6th, 9th, 10th, 17th; Red Bluff, 3d, 4th; Sacramento, 4th to 12th, 15th to 18th; San Francisco, 5th, 6th.

Texas.—Galveston, 5th, 6th, 18th; Indianola, 4th, 5th, 17th, 18th; San Antonio, 4th, 5th.

PRECIPITATION.

[Expressed in inches.]

The distribution of rainfall over the United States and Canada, as determined from observations taken at more than five hundred stations, is exhibited on chart iv.

From the south Atlantic coast westward to Texas, in the extreme northwest, and in all districts west of the Rocky mountains, excepting the southern plateau, the rainfall of the month has been below the average of February. The deficiencies are very marked in the middle and north Pacific coast regions, where they are 3.80 and 5.40, respectively, and also in Florida and the east Gulf states, where the deficiency is more than two inches. East of the Rocky mountains and north of the thirty fifth parallel, excepting the extreme northwest, the rainfall has been above the average, the districts of greatest excess being the upper Mississippi and Ohio valleys and the lower lake region.

Table of Excessive, Greatest, and Least Monthly Rainfalls.

STATION.	SPECIALLY HEAVY.			Largest Monthly.	SMALLEST MONTHLY.	
	Date.	Amt.	Duration	Amount.	STATION.	Amt.
<i>Alabama.</i>					<i>Arizona.</i>	
Mobile.....	23, 24	2.39			Maricopa.....	0.00
<i>Arkansas.</i>					Texas Hill.....	0.14
Little Rock.....				6.47	San Simon.....	0.35
Fort Smith.....	23, 24	2.53			Pantano.....	0.41
<i>California.</i>					<i>California.</i>	
Los Angeles.....	13, 14	2.42			Tulare.....	0.15
<i>Connecticut.</i>					Goshen.....	0.17
New London.....				6.02	Williams.....	0.18
<i>Illinois.</i>					Modesto.....	0.20
Charleston.....	2, 3	5.10		9.10	Galt.....	0.21
Calro.....				8.52	Princeton.....	0.23
Mattoon.....	2	2.74		8.20	Willows.....	0.23
Anna.....	3, 4	2.72		8.19	Byron.....	0.23
Elmira.....				7.63	Brentwood.....	0.26
Springfield.....	2, 3	1.40		7.53	Chico.....	0.27
Hunker Hill.....				7.42	Orland.....	0.27
Swanwick.....	2, 3	2.70		7.66	Lathrop.....	0.28
<i>Masachuset.</i>				6.32	Niles.....	0.30
Morrison.....	15, 16	2.66			White Water.....	0.34
Riley.....	16	2.23			Junnigan.....	0.35
Collinsville.....	1	2.00			Redding.....	0.36
<i>Indiana.</i>					Red Bluff.....	0.39
Dana.....	3	6.05		10.93	Tehama.....	0.39
Gosport.....	4	5.00		9.90	Turlock.....	0.39
Kokomo.....	4	5.62		9.85	Brighton.....	0.40
Frankfort.....	3	4.96		9.60	Delano.....	0.40
Wabash.....	3, 4	4.50		9.59	Marysville.....	0.40

Table of Excessive, Greatest, and Least Monthly Rainfalls.—Continued.

STATION.	SPECIAL HEAVY			Largest Monthly.	SMALLEST MONTHLY.	
	Date.	Amt.	Duration	Amount.	STATION.	Amt.
<i>Indiana.—Cont'd.</i>					<i>California.—Cont'd.</i>	
Wabash.....	17	2.26			Tracy.....	0.40
Worthington.....				9.24	Kingsburg.....	0.45
Union City.....	3	3.00		9.23	Stockton.....	0.45
Laconia.....	7, 8	2.75		8.96	Woodland.....	0.45
Do.....	10, 11	2.25			<i>Colorado.</i>	
Mitchell.....	3	3.00		8.82	Fort Garland.....	0.30
Do.....	14	2.00			Denver.....	0.45
New Albany.....	6	2.73		8.35	Pike's Peak.....	0.49
Griffin Station.....	3, 4	3.08		8.31	Fort Lewis.....	0.50
Rushville.....	4	2.21		8.31	<i>Dakota.</i>	
Shelbyville.....				8.23	Fort Stevenson.....	0.12
Marengo.....	6	2.05		8.13	Fort Yates.....	0.12
Spiceland.....	3	3.78		8.06	Rapid City.....	0.20
Martinsville.....	4	4.00		7.96	Smithville.....	0.23
Vernon.....	3	2.21		7.94	Fort Meade.....	0.30
Laporte.....	2	2.92		7.86	Fort Buford.....	0.36
New Harmony.....				7.85	Fort Sulby.....	0.44
Hanover.....	7	2.00		7.80	Huron.....	0.47
Franklin.....	4	3.52		7.78	<i>Florida.</i>	
Danville.....	3	3.07		7.74	Sanford.....	0.00
Wells.....				7.72	Punta Rasa.....	0.01
Vincennes.....	4	3.24		7.69	Cedar Keys.....	0.04
Blue Lick.....				7.66	Saint Augustine.....	0.36
Evansville.....	3	2.00		7.61	Jacksonville.....	0.48
Connerville.....	3	2.50		7.56	<i>Minnesota.</i>	
Vevay.....	6, 7	2.00		7.56	Saint Vincent.....	0.24
Huntingburg.....				7.53	Fort Snelling.....	0.30
La Grange.....	17	3.00		7.50	Saint Paul.....	0.44
Montgomery.....	3	5.20		7.50	<i>Montana.</i>	
Degonia Springs.....				7.43	Terry's Landing.....	0.05
Lafayette.....	3	2.95		7.43	Fort Custer.....	0.09
Do.....	14	2.28			Fort Keogh.....	0.11
Salem.....	3, 4	2.95		7.32	Deer Lodge.....	0.21
Dale.....				6.02	New Chicago.....	0.27
Greensburg.....	3	2.90		6.40	Fort Shaw.....	0.31
Monticello.....	3	4.35		6.27	Fort Benton.....	0.45
Huntington.....	3	4.00			Billings.....	0.49
Indianapolis.....	3	2.50			<i>Nebraska.</i>	
Jeffersonville.....	6	2.38			Fort Niobrara.....	0.40
Logansport.....	3	2.35			<i>Nevada.</i>	
Fort Wayne.....	3, 4	4.02		5.80	Brown's.....	0.05
<i>Iowa.</i>					Elko.....	0.05
Keokuk.....	16	3.56		6.13	Hot Springs.....	0.10
Muscatine.....	15, 16	3.01			Tecoma.....	0.15
Davenport.....	16	2.90			Pioche.....	0.28
<i>Kentucky.</i>					Otego.....	0.40
Bowling Green.....	7	2.25		12.10	Palisade.....	0.40
Do.....	11	4.87			Golconda.....	0.45
Frankfort.....				10.15	<i>New Mexico.</i>	
Louisville.....	6	2.21		8.72	Lordsburg.....	0.37
Do.....	10, 11	2.23			<i>Texas.</i>	
<i>Louisiana.</i>					Concho.....	0.00
Point Pleasant.....	11, 12	2.71		11.56	Laredo.....	0.00
Do.....	17	2.10			Fort Davis.....	0.02
Do.....	22, 22, 24	6.52			San Antonio.....	0.33
Shreveport.....	11, 12	1.95		7.24	El Paso.....	0.40
Do.....	16, 17	1.80			<i>Utah.</i>	
<i>Michigan.</i>					Kelton.....	0.05
Coldwater.....				7.39	Blue Creek.....	0.10
Marshall.....				6.11	Terrace.....	0.10
Grand Haven.....	16	2.23			Promontory.....	0.20
<i>Mississippi.</i>					Ogden.....	0.33
Starkville.....	24, 24	2.79		8.41	<i>Washington.</i>	
Vicksburg.....	12	2.11		6.70	Almota.....	0.28
Do.....	25, 24	3.14			<i>Wyoming.</i>	
<i>Missouri.</i>					Cheyenne.....	0.25
Protem.....				8.19		
Centerville.....				6.95		
Pierce City.....	13	2.70		7.65		
Ironton.....				7.45		
Saint Charles.....				7.10		
Saint Louis.....	2, 3	2.17				
<i>New Jersey.</i>						
Vineland.....				6.46		
<i>New York.</i>						
Albany.....	4	2.00				
<i>North Carolina.</i>						
Charlotte.....	17, 18	2.63				
<i>Ohio.</i>						
Cincinnati.....				8.22		
North Lewisburg.....	3	2.50		8.20		
Portsmouth.....	10, 11	2.81		8.03		
College Hill.....				7.50		
Jacksonburg.....	3	2.50		7.40		
Columbus.....				7.19		
Cleveland.....	3	3.62		6.77		
Ruggles.....	2, 3, 4	3.50				
Toledo.....	3	2.26				
<i>Oregon.</i>						
Fort Stevens.....	12, 13	2.60		8.28		
Do.....	17, 18, 19	4.76				
<i>Pennsylvania.</i>						
Meadville.....	3, 4	4.50		8.90		
Grampian Hills.....				6.85		
Franklin.....	11, 12	4.12	24 hours			
<i>Tennessee.</i>						
Memphis.....	10, 11	2.08		8.09		
Nashville.....	6, 7	2.18		7.80		
Austin.....	6	2.65		7.50		
Murfreesborough.....				7.48		
Ashwood.....				7.00		
<i>Washington Territory.</i>						
Fort Canby.....				6.60		
<i>West Virginia.</i>						
Helvetia.....	10, 11	2.80		8.18		
Morgantown.....	6, 7	2.13		7.07		